As described above, when the user lifts the display portion **71**, the display portion **71** will be upheld to enlarge the distance between the bottom side thereof and the surface of base portion **72**. As shown in FIG. **8**, when the display portion **71** is turned around, it will not contact and rub against the top surface of base portion **72**. There will be a spacing **73** formed between the bottom side of the display portion **71** and the top surface of base portion **72** after the display portion **71** is upheld. Therefore, the bottom side of the display portion **71** will never contact and rub against the surface of the seat portion **72**.

As shown in FIGS. **4** and **5**, because the pivotal holes **51** and **61** of the second and third components **5** and **6** are passed through by the cylinder body **42** of the first component **4**, and the first and second components **4** and **5** interfere with each other by taking advantage of the gaps **44** and the projective walls **53**, when the display portion **71** is lifted and the first component **4** is driven to rotate (as shown in FIG. **5**A), the eccentric protuberances **33** and the projective walls **53** will simultaneously interfere in the corresponding gaps **44** to synchronously drive the second component to rotate, hence accomplishing rotation of the vertical shaft. Furthermore, the magnitude of rotation of the vertical shaft is limited by the bumps **52** of the second component **5** and the flanges **63** of the third component **6**, hence avoiding breakage of electric cable due to over-rotation.

As shown in FIGS. **3** and **8**, an electric cable (not shown) between the display portion **71** and base portion **72** first penetrates into the hollow portions of the horizontal shafts **3** via the hole bodies **31** of the horizontal shafts **3**, protrudes out of the end portions of the small-diameter portions **32** of the horizontal shafts **3**, and then penetrates into the pivotal holes **41**, **51**, and **61**, so as to achieve electric connection in the base portion **72**.

To sum up, through the structure of the present invention, the display portion **71** is relatively upheld to enlarge the distance between the bottom side of the display portion **71** and the top surface of base portion **72** at the same time when the display portion **71** is lifted. During the rotation, the display portion **71** will never contact and rub against the top surface of the base potion **72**, and will never be stuck by keys on the top surface of base portion **72** either. Moreover, when the display portion **71** is turned around, no non-smooth rotation occurs. On the contrary, when the display portion **71** is not lifted, the display portion **71** will not be upheld because the eccentric protuberances **33** no longer support between the horizontal shafts **3** and the projective walls **53**. Therefore, the display portion is completely engages with the base portion. Although the present invention has been described with reference to the preferred embodiment thereof, it will be understood that the invention is not limited to the details thereof. Various substitutions and modifications have been suggested in the foregoing description, and other will occur to those of ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the appended claims.

I claim:

1. A rotation shaft mechanism adapted for a portable computer having a display portion, a base portion and at least one rotation shaft mechanism arranged between the display portion and the base portion, the rotation shaft mechanism comprising a horizontal shaft assembly and a vertical shaft assembly;

wherein the horizontal shaft assembly has two horizontal shafts and two eccentric protuberances arranged on the two horizontal shafts, respectively;

wherein the vertical shaft assembly includes:

a first component having a first body, a pair of symmetric projective ears perpendicularly projected from two sides of the first body and a cylinder body disposed at a bottom of the first body, and the pair of projective ears having two holes which the horizontal shafts passes through, respectively;

a second component which the cylinder body is removably mounted on and having two projective wall formed thereon to be corresponding to the two eccentric protuberances of the horizontal shaft assembly, and the first component and the second component interfering with each other so as to rotate synchronously; and

a third component which the second component is mounted on; and

an elastic component surrounded on the cylinder body and disposed between a screw nut screwed at a lower portion of said cylinder body and a bottom face of the third component.

2. The rotation shaft mechanism as claimed in claim **1**, wherein said eccentric protuberance is slipped onto said horizontal shaft, said projective ears of said first component are clamped between said eccentric protuberances and a screw nut type fixing component, and said fixing component is screwed to said horizontal shaft.

3. The rotation shaft mechanism of a display portion of a portable computer as claimed in claim **1**, wherein said first component has two symmetric gaps for being extended by said projective walls.

4. The rotation shaft mechanism of a display portion of a portable computer as claimed in claim **1**, wherein said first component has a gap corresponding to said projective wall, and said projective wall extends into said gap.

5. The rotation shaft mechanism of a display portion of a portable computer as claimed in claim **1**, wherein said third component has a covering having formed a pivotal hole thereon for slipping into said cylinder body.

6. The rotation shaft mechanism of a display portion of a portable computer as claimed in claim **5**, wherein said elastic component is slipped onto said cylinder body of said first component, a screw nut is screwed to a lower portion of said cylinder body, and said elastic component elastically supports between a top wall of said covering and said screw nut.

7. The rotation shaft mechanism of a display portion of a portable computer as claimed in claim **5**, wherein a flange is formed at a partial periphery of said covering, and said second component has a bump adjacent to the periphery of said covering.

8. The rotation shaft mechanism as claimed in claim **1**, wherein said horizontal shaft has a hole formed on a wall thereof in communication with a hollow inner portion thereof, said components of said vertical shaft assembly have connected pivotal holes, and an electric cable between said display portion and a seat portion passes through said hole and the hollow inner portion and said pivotal holes.

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